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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,180	09/04/2001	Yoshiharu Okino	Q64678	9877

7590 07/14/2003
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
Suite 800
2100 Pennsylvania Avenue
Washington, DC 20037-3213

EXAMINER

LUU, THANH X

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 07/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,180

Applicant(s)

OKINO ET AL.

Examiner

Thanh X Luu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horikawa (U.S. Patent 4,754,291) in view of Okino (U.S. Patent 5,754,214) and Leksell et al. (U.S. Patent 5,025,321).

Regarding claims 1-5 and 7-11, Horikawa discloses (see Figures 1 and 2) a light beam scanning device, comprising: a light source (10), a modulator (11) for generating a pulse signal (see Figure 2) including at least one pulse having a period shorter than a period for forming an image corresponding to one pixel on the basis of image data, and modulating light beams emitted from the light source with the pulse signal; and a scanner (14) for scanning a photosensitive material with the modulated light beams. Horikawa further discloses (see column 4, lines 9-31) the modulator determining a number of pulses having a constant period and substantially constant power (I_1 or I_2) within a period for forming an image corresponding to one pixel and modulating the light beams as claimed. Horikawa also discloses (see Figure 2) the period of the pulse is

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less than one tenth of the period for forming an image corresponding to one pixel, an image is formed by (see Figure 1) repeating scanning in a main and sub-scanning direction and a number of pulses (I_1 or I_2) is determined based on tone information. Horikawa does not specifically disclose the light source as a light emitting diode (LED). Okino teaches (see column 1, lines 21-25) that LEDs are interchangeable as light sources in such scanning devices. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide LEDs in the apparatus of Horikawa in view of Okino to provide a smaller and cost effective light source. Horikawa and Okino do not specifically disclose the LED as having a microarea light emitting regions. Leksell et al. teach (see Figure 1 and column 3, lines 30-33) edge emitting devices having micro-area light emitting regions. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an LED with micro-area light emitting regions in the apparatus of Horikawa in view of Okino and Leksell to provide finer light beams for improved printing.

Regarding claims 6 and 12, Horikawa in view of Okino and Leksell disclose the claimed invention as set forth above. Horikawa does not specifically disclose red, blue and green light sources. Okino further teaches (see Figure 1) three light sources having three different color wavelengths. Okino does not specifically teach a red, green or blue (RGB) wavelength. However, RGB and cyan, yellow, magenta (CYM) color palettes are notoriously well known as being interchangeable. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide RGB

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LEDs in the apparatus of Horikawa in view of Okino and Leksell to obtain positive color image exposures and eliminate further image processing.


Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl
July 8, 2003


Thanh X. Luu
Patent Examiner